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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,454	06/04/2001	Feridun Metin	CH9-1999-0037	3863
7590 12/14/2004			EXAMINER	
Ronald L. Drumheller, Esq. 94 Teakettle Spout Road Mahopac, NY 10541			DAVIS, CYNTHIA L	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/873,454	METIN ET AL.	
	Examiner	Art Unit	
	Cynthia L Davis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

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- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

2. The specification is not divided up into sections. Appropriate correction is required.

Claim Objections

3. Claim 16 objected to because of the following informalities: in page 17, line 2, "or more" should be deleted. Alternatively, "one" should be inserted between "of" and "or". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1, 3-8, 10-11, 13, and 16-18 are rejected under 35 U.S.C. 102(a) as being anticipated by Yuasa.

Regarding claim 1, assigning hosts to logical groups of hosts such that the hosts participating in a data communication are assigned to the same group is disclosed in Yuasa, column 8, lines 64-65, and column 19, lines 19-24 (groups are divided up and assigned priority based on the type of communication taking place among members of the group). In a switch of the network, associating each said group with a service class indicative of requirements for forwarding data across the switch for data

communications between hosts in the group, and forwarding received data across the switch in a manner dependent on the service class of the group to which hosts participating in the data communication are assigned is disclosed in column 8, line 66-column 9, line 1. In the switch, disabling data communications between hosts in one or more of said groups when required to satisfy the forwarding requirements for at least one said service class is disclosed in column 9, lines 1-2 and column 19, lines 25-29 (bandwidth is allocated based on priority; a low priority class might get no bandwidth if higher priority classes needed it).

Regarding claim 3, the step of assigning hosts to a logical group being performed by the switch is disclosed in figure 1, element 3, and column 20, lines 29-43 (the virtual group learning section of the LAN switch S assigns hosts to groups).

Regarding claim 4, the step of assigning hosts to a logical group comprising allocating a group identifier to hosts in that group is disclosed in figure 3, which shows an example virtual group registration table for the system, which contains a name for the group.

Regarding claim 5, each said logical group comprising a VLAN, and wherein the step of assigning hosts to a logical group comprises allocating a VLAN identifier to hosts in that group is disclosed in column 19, lines 51-53 (a virtual group may be a VLAN).

Regarding claim 6, a said group being associated with a service class by storing data associating said identifier with that service class is disclosed in figure 3, which contains an entry for priority of the virtual group.

Regarding claim 7, inserting the identifier allocated to a said group in data packets transmitted between hosts in that group is disclosed in column 25, lines 49-59.

Regarding claim 8, for at least one said group, the identifier being inserted in data packets by hosts in that group is disclosed in column 25, lines 49-59 (the identifier is inserted into the data packets at some point in their journey through the hosts in the group).

Regarding claim 10, a high-priority service class and a low-priority service class being defined in the switch, whereby forwarding of received data from hosts in groups associated with the high-priority service class takes precedence over forwarding of received data from hosts in groups associated with the low-priority service class is disclosed in figure 3 (showing that priority levels are assigned to virtual groups) and column 19, lines 19-29.

Regarding claim 11, for at least one said group associated with the high-priority service class, calculating a transmission schedule in the switch indicating time periods for receiving data from hosts in the group such that the data received during said time periods will be forwarded by the switch in accordance with the high-priority service class, said schedule being calculated in dependence on the bandwidth required for data communications between hosts in the group is disclosed in column 19, lines 13-17.

Regarding claim 13, sending the transmission schedule calculated for a said group to the or each transmitting host in the group is disclosed in figure 3, which shows that the virtual group registration table (contained in the virtual group routing table, figure 1, element 8), which is exchanged among the nodes, contains the permissible

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delay time setting, i.e., the transmission schedule for the group (see column 21, lines 1-8).

Regarding claim 16, a plurality of different-priority service classes being defined in the switch, whereby forwarding of received data from hosts in groups associated with each of said different-priority service classes takes precedence over forwarding of received data from hosts in groups associated with any lower-priority service classes is disclosed in figure 3 (showing that priority levels are assigned to virtual groups) and column 19, lines 19-29. Disabling data communications for groups associated with one or more low-priority service classes when required to satisfy the forwarding requirements of or more higher-priority service classes is disclosed in column 9, lines 1-2 and column 19, lines 25-29 (bandwidth is allocated based on priority; a low priority class might get no bandwidth if higher-priority classes needed it).

Regarding claim 17, a switch for connection in a switched Ethernet network is disclosed in figure 1 of Yuasa, which is a block diagram of a VLAN switch. Switching circuitry for forwarding across the switch of data received at a port of the switch is disclosed in figure 1. Memory for storing data indicative of an assignment of hosts in the network to logical groups of hosts, said assignment being such that the hosts participating in a data communication are assigned to the same group is disclosed in figure 1, element 8, which is the virtual group routing table (column 20, line 13). Control logic for associating each said group with a service class indicative of requirements for forwarding data across the switch for data communications between hosts in the group, and for controlling forwarding of received data by the switching circuitry in a manner

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dependent on the service class of the group to which hosts participating in the data communication are assigned is disclosed in column 8, line 66-column 9, line 1. The control logic being configured to disable data communications between hosts in one or more of said groups when required to satisfy the forwarding requirements for at least one said service class is disclosed in column 9, lines 1-2 and column 19, lines 25-29 (bandwidth is allocated based on priority; a low priority class might get no bandwidth if higher priority classes needed it).

Regarding claim 18, at least one switch which comprises switching circuitry for forwarding across the switch of data received at a port of the switch is disclosed in figure 1 of Yuasa, which is a block diagram of a VLAN switch. Memory for storing data indicative of an assignment of hosts in the network to logical groups of hosts is disclosed in figure 1, element 8, which is the virtual group routing table (column 20, line 13). Said assignment being such that the hosts participating in a data communication are assigned to the same group is disclosed in column 8, lines 64-65, and column 19, lines 19-24 (groups are divided up and assigned priority based on the type of communication taking place among members of the group). Control logic for associating each said group with a service class indicative of requirements for forwarding data across the switch for data communications between hosts in the group, and for controlling forwarding of received data by the switching circuitry in a manner dependent on the service class of the group to which hosts participating in the data communication are assigned is disclosed in column 8, line 66-column 9, line 1. The control logic being configured to disable communications between hosts in one or more

of said groups when required to satisfy the forwarding requirements for at least one said service class is disclosed in column 9, lines 1-2 and column 19, lines 25-29 (bandwidth is allocated based on priority; a low priority class might get no bandwidth if higher priority classes needed it). A plurality of hosts connected to ports of said at least one switch is disclosed in figure 4, and column 21, lines 52-65.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 12, 14-15, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuasa in view of Aimoto.

Regarding claim 2, data communications being disabled for a said group by discarding data received from any host in that group is missing from Yuasa. However, Aimoto discloses in column 5, lines 31-36, discarding low priority traffic when necessary. It would have been obvious to one skilled in the art at the time of the invention to discard the low priority traffic. The motivation would be to expend resources on more important traffic.

Regarding claim 12, disabling data communications outside the scheduled time periods for the or each said group associated with the high-priority service class when required to satisfy the forwarding requirements of the high-priority service class is not disclosed in Yuasa. However, Aimoto discloses in column 5, lines 36-43, selectively

discarding high-priority packets if the congestion keeps increasing, in order to alleviate congestion. It would have been obvious to one skilled in the art at the time of the invention to disable communication for a group associated with the high priority service class to satisfy forwarding requirements for that class. The motivation would be to alleviate congestion.

Regarding claim 14, the low-priority service class being defined in the switch for best-effort forwarding of received data is missing from Yuasa. However, Aimoto discloses in column 5, lines 24-30, a best-effort class of traffic that is without bandwidth reservation, i.e., is of low-priority. It would have been obvious to one skilled in the art at the time of the invention to have low-priority traffic defined for best-effort. The motivation would be to give the low-priority traffic whatever bandwidth is available after the higher priority traffic has been taken care of, and no more.

Regarding claim 15, assigning all hosts participating in best-effort data communications to one said group associated with the low-priority service class is not specifically disclosed in Yuasa. However, Yuasa does disclose in column 19, lines 25-27, treating low-priority groups in the same way by giving them longest processing time; essentially, for switching purposes, they are in the same group. It would have been obvious to one skilled in the art at the time of the invention to put all the low-priority traffic in the same group. The motivation would be to have the low-priority traffic all receive the same treatment.

Regarding claim 19, a switched Ethernet network is disclosed in Yuasa, column 5, line 3. Hosts of the network being assigned to logical groups of hosts such that the

hosts participating in a data communication are assigned to the same group in column 8, lines 64-65, and column 19, lines 19-24 (groups are divided up and assigned priority based on the type of communication taking place among members of the group).

Performing the steps of associating each said group with a service class indicative of requirements for forwarding data across the switch for data communications between hosts in the group, and controlling forwarding of received data across the switch in a manner dependent on the service class of the group to which hosts participating in the data communication are assigned is disclosed in column 8, line 66-column 9, line 1.

Disabling data communications between hosts in one or more of said groups when required to satisfy the forwarding requirements for at least one said service class is disclosed in column 9, lines 1-2 and column 19, lines 25-29 (bandwidth is allocated based on priority; a low priority class might get no bandwidth if higher priority classes needed it). A computer program product comprising computer program code means executable by a processor of a switch for connection is missing from Yuasa. However, Aimoto discloses using software to implement a switching algorithm in column 16, lines 42-43. It would have been obvious to one skilled in the art to implement this system using software. The motivation would be to have a convenient way to implement the system.

Regarding claim 20, a switched Ethernet network is disclosed in Yuasa, column 5, line 3. Assigning hosts to logical groups of hosts such that the hosts participating in a data communication are assigned to the same group is disclosed in column 8, lines 64-65, and column 19, lines 19-24 (groups are divided up and assigned priority based on

the type of communication taking place among members of the group). Associating each said group with a service class indicative of requirements for the group and forwarding data across the switch for data communications between hosts in the group, and controlling forwarding of received data across the switch in a manner dependent on the service class of the group to which hosts participating in the data communication are assigned is disclosed in column 8, line 66-column 9, line 1. Disabling data communications between hosts in one or more of said groups when required to satisfy the forwarding requirements for at least one said service class is disclosed in column 9, lines 1-2 and column 19, lines 25-29 (bandwidth is allocated based on priority; a low priority class might get no bandwidth if higher priority classes needed it). A computer program product comprising computer program code means executable by a processor of a switch for connection is missing from Yuasa. However, Aimoto discloses using software to implement a switching algorithm in column 16, lines 42-43. It would have been obvious to one skilled in the art to implement this system using software. The motivation would be to have a convenient way to implement the system.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yuasa.

Regarding claim 9, for at least one said group, the identifier being inserted by the switch in data packets received from a host in that group is not specifically disclosed in Yuasa. However, Yuasa does disclose in column 25, lines 49-59, the identifier being inserted into the packet. This could be done by the switch, as the switch is capable of identifying the packets before the identifier has been inserted (column 25, lines 46-49). It would have been obvious to one skilled in the art at the time of the invention to have

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the switch insert the identifier. The motivation would be to centralize the insertion of the group identifier into the packets.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600